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Dept. 9CCA/Bldg. 002-2
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EXAMINER

KOROBOV, VITALI A

ART UNIT PAPER NUMBER

2155

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,479

Applicant(s)

CROMER ET AL.

Examiner

Vitali Korobov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) 19-28, 35-44 and 51-60 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 29-34 and 45-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 19-28, 35-44 and 51-60 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/01/2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date multiple.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-18, 29-34 and 45-50 drawn to a system and a method for providing wireless data communication between an access point connected to a communication network and a remote mobile unit, classified in class 709, subclass 238 – Computer-to-computer data routing, subject matter further comprising means or steps for selecting a path via which the computers will transfer data.
- II. Claims 19-25, 35-41, and 51-57, drawn to a mobile computing system, classified in class 709, subclass 228 – Session/connection parameter setting.
- III. Claims 26-28, 42-44 and 58-60, drawn to an access point, classified in class 709, subclass 225 – Computer network access regulating.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions in groups I, II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as a system for providing wireless access to in-range mobile telephones or other wireless devices. Invention II has a separate utility as a network

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traffic routing and a load balancing apparatus. Invention III has a separate utility as a network gateway, providing and regulating network access. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Carlos Munoz-Bustamante (Reg. No. 51349) on 03/29/2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-18, 29-34 and 45-50. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-28, 35-44, and 51-60 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

6. The Information Disclosure Statements as received on multiple dates are considered.

The information disclosure statement filed 02/01/2002, 09/03/2002 and 11/14/2002 fail to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each

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cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. Further, in the Information Disclosure Statements submitted on 02/01/2002 the name of the inventor is misspelled. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig. 2 does not show a radio link 22 referenced by the specifications on page 2 of the instant application. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

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Claim 45 – 50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a non-statutory subject matter: a computer data signal embodied in a carrier wave.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The meaning of the term “association” is not adequately described in the instant specification, which refer to said “association” in connection with admitted prior art, as per Fig. 1 of instant specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6 – 9 are rejected under the second paragraph of 35 U.S.C. 112.

Claim 6 recites the limitation of “said remote access response information” in the first sentence of said claim. There is insufficient antecedent basis for this limitation in

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the claim. A dependant claim 7 is rejected as having the same deficiencies as the claim 6 it depends from.

Claim 8 recites the limitation of "said addresses" in the first sentence of said claim. There is insufficient antecedent basis for this limitation in the claim. A dependant claim 9 is rejected as having the same deficiencies as the claim 8 it depends from.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 – 7 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent 6590928 B1 by Haartsen (hereinafter Haartsen).

With respect to claim 1, Haartsen teaches a method for providing wireless data communication between an access point connected to a communication network (Col. 13, lines 64 – 65 – base station) and a remote mobile unit, out of range of direct wireless communication with said access point (Col. 14, lines 8 – 11), wherein said method comprises: a) establishing a path between said remote mobile unit and said access point, wherein said path includes one or more intermediate mobile units, wherein a first intermediate mobile unit among said intermediate mobile units

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communicates directly by radio with said access point (Col. 14, lines 11 – 14), and wherein pairs of mobile units adjacent one another along said path communicate directly with one another by radio (Col 8, lines 7 – 12, Fig. 6b); and b) sending data along said path between said remote mobile unit and said access point, wherein each said intermediate mobile unit in said path receives wirelessly transmitted data along said path in a first direction, and wherein each said intermediate mobile unit in said path then transmits said data to continue in said first direction along said path (Col. 8, lines 14 – 20, Fig. 6a, Fig. 6b).

With respect to claim 2, Haartsen teaches the method of claim 1, wherein step a) is preceded by determining that said remote mobile unit is out of range of direct wireless communication with said access point (Col 11, lines 28 – 50, 61 - 67 – paging of the recipient; of Col. 14, lines 6 – 11 – differentiation between in-range and out-of-range conditions).

With respect to claim 3, Haartsen teaches the method of claim 1, wherein step a) comprises: c) generating remote access request information, including an address identifying said remote mobile unit, within said remote mobile unit (Col. 6, lines 27 – 28); d) transmitting said remote access request information by radio from said remote mobile unit (Col. 6, lines 27 – 32); e) receiving said remote access request information by radio in each intermediate mobile unit in said path, adding an address identifying said intermediate mobile unit as a part of said path to said remote access request information, and then retransmitting said remote access request information by radio from said intermediate mobile unit (Col 4, lines 46 – 50, where slave units are

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intermediate mobile units that provide their addresses as parts of the path (configuration tree and topology information); f) receiving said remote access request information by radio in said access point (Col. 13, lines 61 – 65, where access point is a base station); g) generating remote access response information, including an address identifying said access point, within said access point (Col. 13, line 62 – recipient's address, clock and type of service); h) transmitting said remote access response information by radio from said access point (Col. 13, line 62 – base station responds); i) receiving said remote access response information by radio in each intermediate mobile unit in said path as said remote access information is transmitted from said access point to said remote mobile unit, wherein each intermediate mobile unit is identified as being within said path by said address identifying said intermediate mobile unit, and then retransmitting said remote access response information by radio from said intermediate mobile unit (Col. 4, lines 46 – 50, whereby each unit is identified on the path by the topology and configuration tree information; See further Fig. 11 – retransmission along configuration tree 1105); j) receiving said remote access response information by radio in said remote mobile unit (Col. 4, lines 46 – 50 – receiving means); and k) storing said addresses identifying each said intermediate mobile unit in said path and said access point (Col. 4, lines 46 – 50 – configuration tree and topology information).

With respect to claim 4, Haartsen teaches the method of claim 3, wherein, within step e), said step of retransmitting said remote access request information is preceded by determining whether said intermediate mobile unit is within range to transmit data directly by radio to said access point and to receive data directly by radio from said

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access point, and said step of retransmitting said remote access request information directs said remote access request information to said access point if said intermediate mobile unit is within range to transmit data directly by radio to said access point and to receive data directly by radio from said access point (Col. 11, lines 61 – 67 – paging and attempting to connect).

With respect to claim 5, Haartsen teaches the method of claim 4, wherein, within step e), said step of determining whether said intermediate mobile unit is within range to transmit data directly by radio to said access point and to receive data directly by radio from said access point is preceded by determining that said intermediate mobile unit is not associated with said access point, and said step of retransmitting said remote access request information directs said remote access request information to said access point if said intermediate mobile unit is determined to be associated with said access point (Col. 11, lines 41 – 47, synchronization of hop sequence phase per system clock of the master unit).

With respect to claim 6, Haartsen teaches the method of claim 2, further comprising the steps of: receiving a plurality of said remote access response information at said remote mobile unit, including a plurality of paths described by addresses identifying said access point and said intermediate mobile units, and storing a path first received by said remote mobile unit within said remote mobile unit to describe said path for sending data in step b). (Fig. 11 illustrates the utilization of a connectivity tree to determine possible routes for making a connection).

With respect to claim 7, Haartsen teaches the method of claim 6, wherein one or

more paths received by said remote mobile unit after said path first received are stored within said remote mobile unit to describe said path for sending data in step b) after a failure to receive data transmitted along said path first received. (Fig. 10, second connectivity tree 1001).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8 – 18, 29 - 34 and 45 – 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 6590928 B1 by Haartsen (hereinafter Haartsen), and further in view of U. S. Patent Application Publication 2002/0045435 A1 by Fantaske (hereinafter Fantaske)

With respect to claim 8, Haartsen teaches the method of claim 2, wherein step b) includes: generating data information within said remote mobile unit (Col. 6, lines 27 – 28); adding said addresses, identifying each said intermediate mobile unit in said path and said access point, to said data information generated within said remote mobile unit (Col. 5, lines 15 – 20); transmitting said data information generated within said remote mobile unit by radio from said remote mobile unit (Fig. 11, transmission routes 1101, 1103, 1105); receiving said data information generated within said remote mobile unit by radio in each intermediate mobile unit in said path as said data information generated within said remote mobile unit is transmitted from said remote mobile unit to said access point (Col. 15, lines 38 – 45), wherein each said intermediate mobile unit is identified as being within said path by said address identifying said intermediate mobile unit (Col. 18, lines 6 – 10), and then retransmitting said data information generated within said remote mobile unit by radio (Units 10, 1, 4, 6 along transmission route 1105 on Fig. 11 are mobile units communicating via radio); and receiving said data information generated within said remote mobile unit by radio in said access point (Col. 13, lines 60 – 65); Haarsen does not explicitly teach the last two limitations of claim 8. Fantaske teaches deleting the addresses, identifying each said intermediate mobile unit in said path and said access point, from said data information generated within said remote mobile unit (§0075, lines 1 – 6, removal of the frame header); and sending said data information generated within said remote mobile unit along said communication network from said access point (§0075, lines 1 – 6).

With respect to claim 9, the Haartsen/Fantaske combination teaches the method

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of claim 8, wherein step b) additionally includes: receiving data information from said communication network, addressed to said remote mobile unit, at said access point (§0083, lines 1 – 4); adding said addresses, identifying each said intermediate mobile unit in said path and said access point, to said data information received from said communication network (§0083, lines 4 – 11); transmitting said data information received from said communication network by radio from said access point (§0083, lines 11 – 16); receiving said data information received from said communication network by radio in each intermediate mobile unit in said path as said data information received from said communication network is transmitted from said access point to said remote mobile unit, wherein each said intermediate mobile unit is identified as being within said path by said address identifying said intermediate mobile unit (Col. 16, lines 44 – 47 – association of intermediate units with the connectivity tree), and then retransmitting said data information received from said communication network by radio; and receiving said data information received from said communication network by radio in said remote mobile unit (Haarsen, Fig. 11, transmission routes 1101, 1103, 1105, response data flow is not shown, but inherently present, since there would be no point establishing communications if there is never any response).

Haartsen and Fantaske are analogous art because they are both related to establishing communications between wired and wireless networks. Therefore, it would have been obvious to one having ordinary skills in the art at the time the invention was made to combine the teachings of Haartsen with the teaching of Fantaske. A person with ordinary skill in the art would have been motivated to combine the teachings of

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Haartsen with the teaching of Fantaske in order to create a data communication system which is optimized for communications over wireless networks. (Fantaske, §0008).

Claims 10 – 12 are rejected in view of the above rejection of claims 1 – 9. Claims 10 – 12 are essentially the same as claims 1 - 9, except that said claims 10 – 12 set forth the invention as a system product rather than a method, as do claims 1 - 9.

With respect to claim 13, Haartsen teaches a mobile computing system comprising: a radio device; information storage; and a microprocessor (Col. 13, lines 64 – 65, laptop computer, known to comprise wireless cards, information storage and a microprocessor) programmed to cause said mobile computing system to perform the steps of: a) determining whether said radio device is within range to transmit data to an access point and to receive data from said access point (Col. 13, 54-57, 61-65 – inquiry messages to base station, Col. 14, lines 1-8); Haartsen does not explicitly teach the limitation b) of claim 13. Fantaske teaches the limitation b), requesting association with said access point in response to the determining step a) (§0099, lines 7 to end of paragraph); c) transmitting remote access request frames through said radio device in response to the determining step a) (Fantaske, §0100, lines 1 – 4). Haartsen teaches the limitation d), storing in said information storage, in response to receiving first remote access response frames through said radio device, addresses of an access point and of intermediate computing systems providing a first path between said mobile computing system and said access point (Col. 13, lines 66 – 67 and col. 14, lines 1 – 5); the limitation e), adding said addresses of said access point and of said intermediate computing systems to data frames to be transmitted (Col. 15, lines 10 – 13); and f)

transmitting said data frames through said radio device (Col. 15, lines 38 – 45).

With respect to claim 14, Haartsen/Fantaske combination teaches the mobile computing system of claim 13, wherein said microprocessor is programmed to cause said mobile computing system to perform the additional steps of: storing in a data structure within said information storage (Col. 5, lines 15 – 20), after step d) and in response to receiving additional remote access response frames, addresses of one or more access points and of intermediate computing systems thereby providing a plurality of additional paths between said mobile computing system and said one or more access points (Haarsen, Fig. 11, plurality of transmission paths, 1101, 1103, 1105); examining received data frames to determine if a data transmission problem exists (Col. 18, lines 18 – 29, lines 61 – 63 – selecting an alternative route in case of transmission problems); and adding addresses forming a path in said plurality of additional paths stored in said data structure to said data frames to be transmitted when a data transmission problem exists (Col. 15, lines 10 – 13).

With respect to claim 15, Haartsen teaches the mobile computing system of claim 14, wherein said microprocessor is programmed to cause said mobile computing system to perform an additional step of repeating steps a) through f) in response to determining that a data transmission problem exists, and additionally in response to determining that all paths stored in said data structure have been used (Col. 18, lines 61 – 63, lines 66 – 67; col. 19, lines 1 – 5).

With respect to claim 16, Fantaske teaches the mobile computing system of claim 14, wherein a data transmission problem is determined to exist when a

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termination tag is detected as part of said received data frames (§0069 – message status identifiers – message tags).

With respect to claim 17, Haartsen/Fantaske combination teaches the mobile computing system of claim 13, wherein step a) includes: transmitting probe frames through said radio device (Haartsen, Col. 11, lines 61 – 64 – paging messages, col. 13, lines 54 – 57 – inquiry messages), and determining that said radio device is within range to transmit data to an access point (Fantaske, §0063 – beacon frames and determination if the mobile unit is in range) and to receive data from said access point if response frames, transmitted from said access point in response to said probe frames, are received through said radio device within a predetermined time (Fantaske, §0078).

With respect to claim 18, Haartsen/Fantaske combination teaches the mobile computing system of claim 13, wherein step a) includes receiving beacon frames transmitted from an access point within a predetermined time (Fantaske, §0063 – lines 4 – 7, “beacon” frames are transmitted periodically).

Claims 29 – 34 are rejected since said claims encompass the same scope of the invention as that of the claims 13 - 18. Therefore, said claims 29 – 34 are rejected in view of and for the same reason as the claims 13 – 18, since claims 29 – 34 set forth the invention as a computer usable medium rather than a system, as do claims 13 – 18.

Claims 45 – 50 are rejected since said claims encompass the same scope of the invention as that of the claims 13 - 18. Therefore, said claims 45 – 50 are rejected in view of and for the same reason as the claims 13 – 18, since claims 29 – 34 set forth the invention as a computer data signal embodied in a carrier wave rather than a

system, as do claims 13 – 18.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objection made. Applicant must show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

U.S. Patent No. 6,055,561 by Feldman et al. The patent is considered pertinent to the applicant disclosure because it teaches a system whereas an Integrated Switch Router ID is appended to every message that goes through that router.

U.S. Patent No. 6,546,425 by Hanson et al. The patent is considered pertinent to the applicant disclosure because it teaches a method and an apparatus for providing mobile and other intermittent connectivity in a computing environment, and in particular the use of termination tags and association of mobile devices with a particular access point.

U.S. Patent No. 6,782,422 by Bahl et al. The patent is considered pertinent to the applicant disclosure because it teaches a network communications method and a system comprising a network of mobile and stationary computers, comprising access points and utilizing header generation/stripping, termination tags, alternative routing of messages based on bandwidth considerations/load balancing and setting predetermined times for receiving a response to a message.

U.S. Patent Application Publication No. 2002/0146981 by Saint-Hilaire et al. This patent publication is considered pertinent to the applicant disclosure because it teaches a method of extending of wireless personal area networks through the use of intermediate mobile devices.

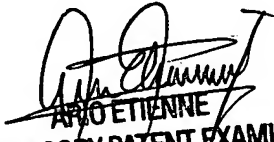
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vitali Korobov whose telephone number is 571-272-7506. The examiner can normally be reached on Mon-Friday 8a.m. - 4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vitali Korobov
Examiner
Art Unit 2155

04/20/2005


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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100